SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *STATIONARY SOURCE COMPLIANCE DIVISION* APPLICATION PROCESSING AND CALCULATIONS	PAGES 12	PAGE 1
	APPL. NO. 501186	DATE 12/19/09
	PROCESSED BY E.R.Ruivivar	CHECKED BY:

PERMIT TO CONSTRUCT AND OPERATE (P/C-P/O)
-Modification-

COMPANY NAME: Chevron Products Company

MAILING ADDRESS: 324 W. El Segundo Blvd.
El Segundo, CA 90245

EQUIPMENT LOCATION: 324 W. El Segundo Blvd.
El Segundo, CA 90245

EQUIPMENT DESCRIPTION:

APPLICATION NO. 501186

Additions to the equipment description are noted in bold & underlines. Deletions are noted in strikeouts

FACILITY PERMIT *SECTION D*			
PROCESS 16		SYSTEM 10	
STORAGE TANKS		DOMED EXTERNAL FLOATING ROOF TANKS	
DESCRIPTION	DEVICE ID NO.	Emissions and Requirements	CONDITIONS
STORAGE TANK, DOMED EXTERNAL FLOATING ROOF, NO. 983, WELDED SHELL, 52,000 BBL; DIAMETER: 90 FT; HEIGHT: 47 FT 8 IN, WITH DOME COVER, GEODESIC FLOATING ROOF, PONTOON~~,~~ ~~WELDED~~ PRIMARY SEAL, CATEGORY A, METALLIC SHOE SECONDARY SEAL, CATEGORY B , RIM MOUNTED GUIDEPOLE, ~~UNSLOTTED~~ **SLOTTED**, WITH GASKETED SLIDING COVER, **POLE SLEEVE**, AND POLE WIPER A/N: ~~436073~~ **501186**	D1428	HAP: (10) [40CFR 63 Subpart CC, #3A, 5-25-2001]	Process: P13.1 System: S1.2, S13.9, S31.15, S31.20 (all existing) Device: K67.54 (existing)

- CONDITIONS -

-

Additions to the permit condition are noted in **bold & underlines**. Revision (device added to existing condition) in **bold** only. Deletions are noted in strikeouts.

PROCESS CONDITIONS

P13.1
All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Benzene	40CFR61, SUBPART	FF

[40CFR 61 Subpart FF, 12-4-2003]

[Processes subject to this condition : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16]

SYSTEM CONDITIONS

S1.2
The operator shall limit the number of flaring events due to startups to no more than 2 event(s) in any one calendar year.

[RULE 1703 - PSD Analysis, 10-7-1988; CA PRC CEQA, 11-23-1970]

[Systems subject to this condition : Process 16, System 10; Process 20, System 36]

S13.9
All devices under this system are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	463
VOC	District Rule	1149
VOC	District Rule	1178

For Rule 463 applicability, only subdivision (d) in the March 11, 1994 amendment, or equivalent requirements in the future amendments, shall apply to domed external floating roof tanks. This does not preclude any requirements specified in Rule 1178.

[RULE 1149, 7-14-1995; RULE 1178, 12-21-2001; RULE 463, 3-11-1994; RULE 463, 5-6-2005]

[Systems subject to this condition : Process 16, System 10]

S31.15
The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s) 378811, 380595, 380596, 380597, 380611, 385371, 385372, 385373, and 385374:

The operator shall provide to the District, no later than 60 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The valves and flanges shall be categorized by size and service. The operator shall submit a listing of all new non-bellows seal valves which shall be categorized by tag no., size, type, operating temperature, operating pressure, body material, application, and reasons why bellows seal valves were not used.

All new valves in VOC service, except those specifically exempted by Rule 1173, shall be bellows seal valves, except as approved by the District, in the following applications: heavy liquid service, control valve, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure could pose safety hazard (e.g., drain valves with valve stems in horizontal position), retrofits/special applications with space limitations, and valves not commercially available.

All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in R1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records.

All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA reference Method 21. All new valves and flanges in VOC service, except those specifically exempted by Rule 1173, shall be inspected monthly using EPA Method 21.

If 98.0 percent or greater of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then the operator may change to a quarterly inspection program with the approval of the District.

The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new(non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv.

All new components in VOC service with a leak greater than 500 ppmv but less than 1,000 ppmv, as methane, measured above background using EPA Method 21 shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief valve, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173.

The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District. Records shall be kept and maintained for at

least two years, and shall be made available to the Executive Officer or his authorized representative upon request.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996]

[Systems subject to this condition : Process 1, System 18; Process 3, System 5; Process 4, System 3 , 4; Process 7, System 7; Process 8, System 8; Process 14, System 28; Process 16, System 8, 10]

S31.20
The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s) 466150, 466876, 467544, and 467547:

All sampling connections shall be closed-purge, closed loop, or closed-vent systems.

All new valves in VOC service shall be leakless type, except those specifically exempted by Rule 1173 or approved by the District in the following applications: heavy liquid service, control valves, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure could pose safety hazard (e.g., drain valves with valve stems in horizontal position), retrofits/special applications with space limitations, and valves not commercially available.

For the purpose of this condition, leakless valve shall be defined as any valve equipped with sealed bellows or equivalent approved in writing by the District prior to installation.

All new components in VOC service as defined by Rule 1173, except valves and flanges shall be inspected quarterly using EPA Reference Method 21. All new valves and flanges in VOC service except those specifically exempted by Rule 1173 shall be inspected monthly using EPA Method 21. Components shall be defined as any valve, flange, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173

The following leaks shall be repaired within 7 calendar days -- all light liquid/gas/vapor components leaking at a rate of 500 to 10,000 ppm, heavy liquid components leaking at a rate of 100 to 500 ppm and greater than 3 drops/minute, unless otherwise extended as allowed under Rule 1173.

The following leaks shall be repaired within 2 calendar days -- any leak between 10,000 to 25,000 ppm, any atmospheric PRD leaking at a rate of 200 to 25,000 ppm, unless otherwise extended as allowed under Rule 1173.

The following leaks shall be repaired within 1 calendar day -- any leak greater than 25,000 ppm, heavy liquid leak greater than 500 ppm, or light liquid leak greater than 3 drops per minute.

If 98.0 percent or greater of the new valve and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then

the operator may revert to a quarterly inspection program with the approval of the Executive Officer. This condition shall not apply to leakless valves.

The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new valves and the new flange population inspected are found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv. This condition shall not apply to leakless valves.

The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District.

The operator shall provide to the District, prior to initial startup, a list of all non-leakless type valves that were installed. The list shall include the tag numbers for the valves and reasons why leakless valves were not used. The operator shall not startup the equipment prior to the Districts approval for the use of all non-leakless valves

The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The operator shall also submit a complete, as built, piping and instrumentation diagram(s) and copies of requisition data sheets or field inspection surveys for all non-leakless type valves with a listing of tag numbers and reasons why leakless valves were not used.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996]

[Systems subject to this condition : Process 16, System 10; Process 20, System 37]

DEVICE CONDITIONS

K. Record Keeping/Reporting

K67.54
The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Tank throughput in barrels

Commodity/product stored and time period of its storage.

Actual vapor pressure, in psia, of each commodity/product stored.

Other records that may be required to comply with the applicable requirements of District Rules 463, 1149, 1178, and 40CFR63, Subpart CC.

[RULE 1149, 5-2-2008; RULE 1178, 4-7-2006; RULE 463, 5-6-2005; 40CFR 63 Subpart CC, 6-23-2003]

[Devices subject to this condition : D1324, D1351, D1356, D1357, D1360, D1361, D1362, D1363, D1366, D1378, D1421, D1422, D1424, D1426, D1428, D1430, D1436, D1437, D1440, D1445, D1446, D1447, D1449, D1451]

I. BACKGROUND / GENERAL INFORMATION:

Chevron Products Co. submitted this AN501186 on 08-07-09 for modification of its existing external floating roof tank No. 983 by the replacement of its unslotted guidepole with a slotted guidepole with pole sleeve and the existing gasketed sliding cover and pole wiper. The previous modification to the subject tank was approved under AN436073 (see **Appendix A** for copy of the current permit) for some corrections on the equipment description as shown on page 1 of the previous evaluation under AN436073 (see **Appendix B** for copy).

The proposed modification to the subject tank would allow the use of an automatic liquid level gauging device. This modification is not expected to increase tank throughput, the kind of materials normally stored in the tank, the number of fugitive components, and also the tank roof fittings count as shown in **Appendix C,** except the proposed guidepole replacement. The tank location is shown in the plot plan in **Appendix D**.

A permit history of Tank No. 983 is summarized below:

Permit History for Tank 983 (D1428) (A/N 501186)

Permit to Construct		**Permit to Operate**		**Description of Modification**
No.	Issue Date	No.	Issue Date	
		44102		Records not available. This is a pre-1976 permit. Chevron states that this tank was constructed in 1952.
C06430	1/07/77	na.		Installation of a secondary seal as a research permit (R441) to determine effectiveness of a "Maloney" type secondary seal.
C17401	4/19/78	RM19298 (Inact. 2-8-06))	10/29/81	Installation of a secondary seal for compliance with Rule 463.
422443 (cancelled, 1-31-06)	2-17-04	---	---	Installation of a Geodesic Dome Cover, slotted guidepole, and upgrade of the roof fittings to comply with Rule 1178. The slotted guidepole was not installed.
436073	---	F80442	1-31-06	Completed modification under AN422443 and correction to equipment description.
501186	---	---	---	This subject application for guidepole replacement from unslotted to slotted with vapor controls.

From the table above, it can be noted that none of the changes done to he subject tank up to the previous AN436073 triggered NSR or NSPS and therefore, no throughput limit or vapor limit was ever imposed on the tank.

District records do not indicate any past or outstanding compliance problem with the operation of the subject storage tank.

II. EMISSION ESTIMATE:

In order to show the maximum change in VOC emissions from the subject storage tank as a result of the proposed modification described above, calculations using EPA Tank 4.0 program were done under the following parameters: [Note – The subject tank has no throughput and storage vapor pressure limit conditions and the proposed modification is not expected to change these parameters; therefore, emission calculations may be based on the following parameters:

Throughout – 630,000 bbls/mon (this is reported to be the max)

Storage vapor pressure – 10.99 psia (Rule 463 limit)

as shown in **Appendices E** (pre-modification) & **F** (post-modification). The calculations for the post-modification scenario assume the same operating parameters to reflect no change in the method of operation and rating (same throughput rate for same commodity, vapor pressure, etc. as the pre-modification scenario) as proposed by Chevron except the use of a slotted guidepole instead of unslotted guidepole in the post modification-scenario. Results of these calculations are shown below - (see also **Appendix G**):

Commodity	Estimated Total VOC Emissions, Lbs/Yr		Net Emission Change, Lbs VOC/Day
	Post-modification**	Pre-modification *	
Gasoline product (worst case scenario)	3,038.11	3,166.94	- 128.83 lbs/yr or **-0.35 lb VOC/day**

* Pre-modification – domed external floating roof tank with unslotted guidepole
** Post-modification – domed external floating roof tank with slotted guidepole

As shown above, the proposed tank modification would not trigger NSR or Rule 1401 review because it would not result in an emission increase or corresponding increase in toxic risk. The emission reduction expected of 0.35 lb VOC/day as shown above would not be accumulated for NSR purposes because no new limit on the tank operating parameters would be imposed.

III. EVALUATION:

As stated above, the proposed modification to the subject storage tank by the replacement of the tank guidepole from unslotted to slotted with vapor controls would not result in a net emission increase and therefore, the modification is not subject to the provisions of NSR or new NSPS requirements. On this basis, no operating limits tied to NSR like throughput and vapor pressure would be imposed.

The subject tank after the proposed modification is expected to continue to comply with the following District Rules and Regulations:

Rule 212: No public notice is required because there is no emission increase from the modification. There is also no increase in toxic health risk and the equipment is not located within a 1,000-ft. of a school.

Rule 401: No visible emission to violate this rule is expected.

Rule 402: No nuisance problem is expected.

Rule 463: This tank is subject to the requirements of this rule since it has a storage volume of greater than 19,815 gallons and stores organic liquids, which is any liquid containing VOCs. Domed External Floating Roof Tanks are subject only to the requirements in Rule 463(d). Compliance with the requirements is expected.

Reg. IX: Standards of Performance for New Stationary Sources:
40CFR60, Subpart K (*Construction, Reconstruction or Modification after 6-1-73 and prior to 5-19-78*)
40CFR60, Subpart Ka (*Construction, Reconstruction or Modification after 5-18-78and prior to 7-23-84*)
40CFR60, Subpart Kb (*Construction, Reconstruction or Modification after 7-23-84*)

Tank No. 983 is not subject to any of the listed New Source Performance Standards since it was constructed prior to the applicability dates of these regulations and has never been subject to a "modification" or "reconstruction" under the definitions in 40CFR60.

40CFR60.14(a): Modification - "Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies"
The subject modification would not result in an emission increase

.

40CFR60.15(a&b): Reconstruction – "An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate. "Reconstruction" means the replacement of components of an existing facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and
(2) It is technologically and economically feasible to meet the applicable standards set forth in this part."

As seen in the "Permit History" section, the subject tank was installed prior to 1973. In 1977 a secondary seal was installed under a research permit (AN C06430). In 1978, a permanent secondary seal was installed under PC AN C17401. These seal changes do not qualify as "modifications" since there was no increase in VOC emissions and do not qualify as "reconstruction" since the fixed capital cost did not exceed 50% of the fixed capital cost for construction of a new tank.

Installation of the Geodesic Dome Cover under PC AN 422443 does not qualify as a modification since there is no increase in emissions and does not qualify as "reconstruction" since the cost of construction does not exceed 50% of the fixed capital cost for construction of a new tank.

Correction of the roof type does not qualify as a modification since there is no increase in VOC emissions or reconstruction since there was no construction involved.

40CFR63, Subpart CC

This Subpart applies to petroleum refining sources and related emission sources that are specified in section 63.640 (c) (5) through (c) (7) [e.g. miscellaneous process vents (except for FCCU, SRU, and CRU vents), storage vessels, wastewater stream, equipment leaks, gasoline loading racks, marine vessel loading, etc.] that are located in a major source and emit or have equipment contacting one or more of the hazardous air pollutants (HAPs) listed in Table 1 of this subpart. This subpart took effect on August 18, 1998 and was last amended on April 25, 2001.

This storage tank is subject to this MACT standard as a Group 1 storage vessel. A Group 1 storage vessel is defined as a "storage vessel at an existing source that has a design capacity greater than or equal to 177 cubic meters (46728 gallons) and stored-liquid maximum vapor pressure greater than or equal to 10.4 kilopascals (1.5 psia) and stored-liquid annual average true vapor pressure greater than or equal to 8.3 kilopascals (1.2 psia) and annual average HAP liquid concentration greater than 4 percent by weight total organic HAP."

63.646(a) of this subpart references the storage tank requirements of 40CFR63.119 through 63.121 [MACT Subpart G for the Synthetic Organic Chemical Manufacturing Industry] except as provided in 63.646(b) through (l). 63.646(c) specifies that the following paragraphs in 40CFR63 Subpart G do not apply to storage vessels at existing sources: 63.119(b)(5), (b)(6), (c)(2), and (d)(2).

Requirements for Domed External Floating Roof Tanks

63.119(d) in Subpart G contains requirements for EFR tanks that have been converted to internal floating roof tanks (i.e., fixed roof installed above an EFR) as summarized below. The subject dome roof tank must comply with these requirements.

Seal Requirements: 63.119(d)(1) references back to the seal requirements specified in 63.119(b)(1) – (b)(3). These section require that each internal floating roof shall be equipped with one of the following devices:

- A liquid-mounted seal
- A metallic shoe seal
- Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor- mounted, but both must be continuous seals.

This tanks roof is equipped with a mechanical shoe primary and rim-mounted secondary seal that meet the seal requirements of this rule.

Deck Fittings: 63.119(d)(2) references back to the deck fitting requirements for internal floating roof tanks specified in 63.119(c)(2)(i) through (c)(2)(xii) but as mentioned above 63.646(c) specifies that the requirements at 63.119(d)(2) do not apply to storage vessels at existing sources. 63.646(f) does contain some deck fitting related requirements for storage vessels at existing source. These are:

- If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access.
- Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.
- Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

Compliance with these deck fitting requirements is expected.

Correction of the roof type and the proposed guidepole replacement do not impact compliance with this rule. Compliance with the requirements of this regulation is expected.

Reg. X: National Emission Standards for Hazardous Air Pollutants :

The subject tank was previously identified by the applicant as being not subject to this regulation. The proposed modification should not affect this determination.. No waste materials that would require compliance with his regulation would be handled.

Rule 1149 Compliance with tank cleaning and degassing requirements of this rule is expected.

Rule 1173 There would be no new fugitive components whose emissions would be associated with the tank permit unit. The applicant has a maintenance and inspection program required by this rule for the facility.

Rule 1178 This rule is applicable to this facility since it is a petroleum refinery with facility wide VOC emissions exceeding the 20 ton/year VOC threshold.

This rule applies to all aboveground storage tanks that have capacity equal to or greater than 75,000 liters (19,815 gallons), are used to store organic liquids with a true vapor pressure greater than 5 mm Hg (0.1 psi) absolute under actual storage conditions.

1178(d)(1)(A): This clause specifies the Roof Opening/ Fittings and Roof Seal requirements for external and domed external floating roof tanks. As

shown in the table below, the fittings/controls and seals for this pontoon roof and the unslotted guidepole fittings/control meet the requirements of this rule.

Summary of Roof Opening / Fitting Controls and Seals

Roof Opening / Fitting or Seal Type	Roof Seal and Opening/Fitting Configuration		Applicable Rule 1178 Citation
	No	Type	
Access Hatch	3	Cover: bolted & gasketed	1178(d)(1)(A)(i)
Automatic Gauge Float Well	1	Cover: bolted & gasketed	1178(d)(1)(A)(i)
Gauge Hatch / Sample Well	2	Weighted mechanical actuation; Cover: gasketed.	1178(d)(1)(A)(ii)
Roof Legs	28 total	Adjustable; ~~gasket~~ or impervious sock cover	1178(d)(1)(A)(iii)
Rim Vent	0	Gasketed	1178(d)(1)(A)(iv)
Vacuum Breaker	1	Weighted mechanical actuation; Gasketed	1178(d)(1)(A)(v)
Slotted Guidepole Well & Guidepole	1	Gasketed sliding cover with pole wiper and pole sleeve	1178(d)(1)(A)(ix)
		Gasketed cover for slotted guidepole opening.	1178(d)(1)(A)(xi)
Primary Seal	1	Mechanical Shoe or ~~liquid mounted~~	1178(d)(1)(B)(i)
Secondary Seal	1	Rim mounted and shall not be attached to the primary seal.	1178(d)(1)(B)(ii)

1178(d)(2)(A): Requires installation of domed roofs on all external floating roof tanks that contain organic liquids having true vapor pressure greater than or equal to 3 psia as reported in the Annual Emissions Report pursuant to Rule 301 - Permit Fees for the emission inventory year 2000 (Phase I tanks). The refinery must install the domed roofs on Phase I tanks according to the schedule contained in (i – iii) of this section or submit a compliance plan demonstrating that 75% of the tanks subject to this provision will have domes installed by December 31, 2006, and 100% of such tanks shall have domes installed by December 31, 2008. Chevron installed this dome cover in 2004 as specified in their approved Rule 1178 plan (AN 433697).

The dome cover and the upgraded deck fittings comply with the requirements of this rule. The tank after modification is expected to comply with the applicable requirements of R1178 for its fittings as listed in the above table and its existing dome cover per R1178(d)(2)(A).

Reg. XIII: New Source Review

Emission Increase: No emission increase is expected from the modification. Therefore, no BACT or emission offset is required.

Modeling: There is no VOC dispersion modeling required under R1303(b)(1), Appendix A.

Sensitive Zone Requirements – Not applicable because no ERC is required for this application.

Facility Compliance - Not applicable since there is no emission increase from the modification.

Rule 1401: There is no incremental increase in health risk that is expected from the modification and therefore, will comply with this rule.

CEQA: The proposed modification is not a significant project or part of a significant project requiring a CEQA document.

Reg. XX: RECLAIM rules do not apply since the modification does not affect NOx and SOx emissions from the facility. The facility, however, is covered by a RECLAIM Permit that would incorporate this change.

Reg. XXX: A initial Title V permit has been issued to the facility The subject proposed modification is a minor permit revision under Reg. XXX – Title V Permits because it would not result in any emission increase per Rule 3000(12)(A)(vi). No public notice is required but EPA has to be provided with the application and proposed permit revision and also a copy of the Title V permit within 5 days of its issuance.

IV. RECOMMENDATION:

Based on the foregoing evaluation, it is recommended that a Permit to Construct and Operate be issued for the subject storage tank modification because compliance with all applicable Rules and Regulations is most likely, subject to all the conditions on pages 2 to 6.

Emmanuel Ruivivar
A.Q. Engr. II